UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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	Application No.	Applicant(s)
Office Action Summary	10/588,501	KATO, MOTOKI
	Examiner	Art Unit	
	Christopher Crutchfield	2466	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>09 September 2010</u>.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
    closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>24-46</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>24-46</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

    1.☐ Certified copies of the priority documents have been received.

    2.☐ Certified copies of the priority documents have been received in Application No. _____.

    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO/SB/08)
   Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
   Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

1.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Regarding claims 25, 29, 37 and 42, based upon consideration of all of the relevant factors with respect to the claims as a whole, are held to claim an abstract idea, and is therefore rejected as ineligible subject matter under 35 U.S.C. § 101. The rationale for this finding is explained below:

a. The claims are not tied to a particular machine, as the "information processing apparatus" of claims 25, 29, 37 and 42 is capable of being implemented on any machine that is capable of performing the recited steps and is therefore not a "particular machine".

b. The claims do not transform a particular article to a different state or thing, as the claims simply manipulate data and do not result in any physical transformation of a particular physical article or data representing a physical article.

c. Both known and unknown uses of the concept of using priority information to de-multiplex base and enhancement layers are covered and can be performed using any existing or future developed machinery.

Therefore, the claimed subject matter, upon considering the relevant factors, is found to

be directed to non-statutory subject matter under 35 USC 101.

Claim Rejections - 35 USC § 102

2.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in
public use or on sale in this country, more than one year prior to the date of application for patent in
the United States.

3.   **Claims 31 and 44** are rejected under 35 U.S.C. 102(b) as being anticipated by The

ISO/IEC 13818-1 Standard ("The Standard") (Author Unknown, Generic Coding of Moving

Pictures and Associated Audio: Systems, International Organization for Standardization,

Workgroup 11 - Coding of Moving Pictures and Associate Audio, Pages 1-130, 13 November

1994).

Regarding claim 31, the claim recites "A non-transitory computer readable medium

having stored thereon a data structure of an entire stream to be played back by a computer, the

entire stream including a base stream and first to n-th extension streams having extensibility for

the base stream, wherein the entire stream includes TS packets forming the base stream, TS

packets forming each of the first to n-th extension stream, and a header of each of the TS

packets forming the base stream and the TS packets forming each of the first to n-th extension

streams includes an ID identifying the TS packet, and wherein the TS packets each include

transport priority information that indicates priority and respectively distinguishes the base

stream from the first to n-the extension streams". This claim only recites a data structure that is

stored on a computer readable medium. No functionality is tied to the recited elements and the

claims do not require that the stored subject matter be later processed by a machine. Rather the

"claim [recites] merely the information content of a memory". See In re Lowry, 32 F.3d 1579,

1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994). Therefore no patentable weight is given to

the recited data structure and the claim is interpreted to require a "A non-transitory computer

readable medium having stored thereon a data structure", which is disclosed by The ISO/IEC

13818-1 Standard (Page 101 - The Decoder is stored in "NVM" or non-volatile memory.) Finally,

assuming arguendo, that the assertion of non-patentable weight to the claimed data structure is

incorrect, an art rejection of the entirety of claim 31 under 35 USC 103 has been provided, infra.

  Regarding claim 44, the claim recites "A non-transitory computer readable medium

having stored thereon a data structure of an entire stream to be played back by a computer,

wherein the entire stream includes at least one of a base stream and first to n-th extension

streams having extensibility for the base stream, the entire stream includes TS packets forming

the base stream and TS packets forming, when any of synchronization units of the first to n-th

extension streams corresponding to synchronization units of the base stream are present,

among the first to n-th extension streams, the extension stream having the present

synchronization units and a header of each of the TS packets forming the base stream and the

TS packets forming each of the first to n-th extension streams includes a first ID used to identify

the entire stream and transport priority information indicating priority and respectively

distinguishing the base stream from the first to n-th extension streams." This claim only recites a

data structure that is stored on a computer readable medium. No functionality is tied to the

recited elements and the claims do not require that the stored subject matter be later processed

by a machine. Rather the "claim [recites] merely the information content of a memory". See In re

Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994). Therefore no

patentable weight is given to the recited data structure and the claim is interpreted to require a

"A non-transitory computer readable medium having stored thereon a data structure", which is

disclosed by The ISO/IEC 13818-1 Standard (Page 101 - The Decoder is stored in "NVM" or

non-volatile memory.) Finally, assuming arguendo, that the assertion of non-patentable weight

to the claimed data structure is incorrect, an art rejection of the data structure of claim 44 under

35 USC 103 has been provided, infra.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

5.   The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459

(1966), that are applied for establishing a background for determining obviousness under 35

U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating obviousness
        or nonobviousness.

6.   **Claims 24-27, 29-31, 33, 35, 37-39 and 42-44** are rejected under 35 U.S.C. 103(a) as

being unpatentable over The ISO/IEC 13818-1 Standard ("The Standard") (Author Unknown,

Generic Coding of Moving Pictures and Associated Audio: Systems, International Organization

for Standardization, Workgroup 11 - Coding of Moving Pictures and Associate Audio, Pages 1-

130, 13 November 1994) in view of *Bruls*, et al. (US Pre Grant Publication No. 2006/0098937

A1) and *Yahata*, et al. (US Pre Grant Publication No. 2009/0010614 A1).

Regarding claims 24, 25 and 26, *The Standard* discloses an information processing

apparatus, an information processing method implemented using an information processing

apparatus having at least encoding and packetizing parts and a non-transitory computer

readable medium having stored thereon a program that when executed by the computer causes

the computer to execute an information processing method comprising:

a. Encoding means, an encoding step of encoding, using the information processing

apparatus and an encoding step for encoding an input stream so as to include a base

stream (Pages xi-xix, 3-6, 10-13, 21-22,43-50). (The system of The Standard discloses a

system for the encoding and transport of MPEG data [Pages xi-xix]. The system

operates by receiving an incoming video stream [i.e. input stream] [See Fig. 0-1, "Video

data" and "Audio Data", Page xi], encoding the stream into one or more packetized

elementary streams ["PES"] associated with the input stream [Pages xi-xii] [See also

Page 35, Table 2-19, "ISO/IEC 12818-3 ... audio steam number" - Showing the

elementary streams may be part of a layered audio architecture], packetizing the one or

more PES into a transport stream ["TS"] [Fig. 0-1, "Packetizer" and "Mux", Page xii] [See

also Pages xvi-xix, particularly sections 0.4, 0.7 and 0.8], transmitting the TS across a

network to a decoder [Page xii], receiving the TS at the decoder, separating out the input

stream by de-multiplexing the PES's associated with the input stream, decoding the

input stream and providing the decoded video/audio for output [Pages xii-xiii, Particularly

Fig. 0-2] [See also Pages xvi-xix, Particularly Sections 0.4, 0.7 and 0.8].)

b. Adding means for and an adding step of adding ID information that respectively

distinguishes the base stream from other streams (Fig. 0-1, "Packetizer" and "Mux",

Page xii, and "PID", Page 22). (The Standard discloses that each packet of the PES

bears the PID associated with that elementary stream).

d. A packetizing means for packetizing a packetizing step of packetizing, using the

information processing apparatus the base stream, a packetizing step of packetizing the

base stream to which the ID information is added by the adding means, into TS packets

(Fig. 0-1, "Packetizer" and "Mux", Page xii, and "PID", Page 22). (The Standard

discloses that all of the individual streams, including the streams bearing the program

association table and program map table are packetized, including adding the PID to the

packet, and multiplexed into a single TS [Fig. 0-1, "Packetizer" and "Mux", Page xii,

Pages 22 and 43-46].)

The Standard fails to disclose the use of more than one extensible enhancement layers,

each associated with a separate ID so as to create an encoding means, an encoding step of

encoding, using the information processing apparatus and an encoding step for encoding an

input stream so as to include, among a base stream and first to n-th extension streams having

extensibility for the base stream, at least the base stream and the first extension stream, an

adding means for and an adding step of adding ID information that respectively distinguishes

the base stream from the first to n-th extension streams, which are encoded by the encoding

means, to the base stream and the first to n-th extension streams and a packetizing means for packetizing the base stream and the first to n-th extension streams, a packetizing step of packetizing, using the information processing apparatus, the base stream and the first to n-th extension streams to which the transport priority information is added by the adding step, into TS Packets. In the same field of endeavor, *Bruls* discloses the use of more then one extensible enhancement layers, each associated with a separate ID so as to create an encoding means, an encoding step of encoding, using the information processing apparatus and an encoding step for encoding an input stream so as to include, among a base stream and first to n-th extension streams having extensibility for the base stream, at least the base stream and the first extension stream, an adding means for and an adding step of adding ID information that respectively distinguishes the base stream from the first to n-th extension streams, which are encoded by the encoding means, to the base stream and the first to n-th extension streams and a packetizing means for packetizing the base stream and the first to n-th extension streams, a packetizing step of packetizing, using the information processing apparatus, the base stream and the first to n-th extension streams to which the transport priority information is added by the adding step, into TS Packets (Paragraphs 0031, 0039, and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible enhancement layers for encoding and transporting programs using MPEG encoding techniques [Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible enhancement layers, and The Standard discloses the use of an adding and packetizing means for adding identifier information to a stream and packetizing the stream it would have been

obvious to a person of ordinary skill in the art at the time of the invention to combine the

extensible layers of *Bruls* with the system of *The Standard* by implementing one or more

extensible enhancement layers, each identified with a separate ID. The motive to combine is to

allow the system of *The Standard* to support extensible layered video, which allows increased

flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*,

Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement

layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of

the invention, it is unclear if Paragraph 0003 is a part of the background of the invention,

therefore constituting a separate disclosure.) In the same field of endeavor, The Background of

Bruls discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension

layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary

skill in the art at the time of the invention to implement the multiple extension layers of The

Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting

more then one extension stream as a separate elementary stream with its own stream ID. The

motive to combine is to allow enhanced flexibility by providing multiple extension streams so

that endpoints can decode one or more of the extension streams to obtain incremental quality

increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed

to an ID field, to de-multiplex base and enhancement layer packets, such that the information

processing apparatus and method further comprises adding transport priority information that

indicates priority and respectively distinguishes the base stream from the first to n-th extension

streams and packetizing the base stream and the first to n-th extension streams, to which the

transport priority information is added by the adding means, into TS packets. In the same field of

endeavor, *Yahata* discloses the use of a priority field, as opposed to an ID field, to de-multiplex

base and enhancement layer packets, such that the information processing apparatus and

method further comprises adding transport priority information that indicates priority and

respectively distinguishes the base stream from the first to n-th extension streams and

packetizing the base stream and the first to n-th extension streams, to which the transport

priority information is added by the adding means, into TS packets (Paragraphs 0298 and 0326-

0338). (The system of *Yahata* discloses a system that uses a priority bit to de-multiplex a base

frame for a DVD encoding from an extension/enhancement layer frame used for the

enhancement information for blu-ray encoding [Paragraphs 0326-0335]. The priority bit is used

to separate the base layer and the level 1 enhancement layer [i.e. Base+Level-EXT] used for

DVD transmission from the level 2 enhancement layer [i.e. Level 2-EXT] [Paragraph 0326].

Yahata further discloses that the system combines the base layer and the first enhancement

layer in view of the "widespread use" of devices that support the base layer and the first

enhancement layer [i.e. the widespread use of traditional DVD style encoders does not require

the separation of the base and the first enhancement layer, as all devices support both layers,

so only the second enhancement layer, used for HD type devices is separated] [Paragraph

0298].)

          Therefore, since *Yahata* suggests the use of a priority indicator to separate base and

enhancement layers that are contained in elementary streams and the system of *The Standard*

as modified by *Burlsi* suggests that all base and enhancement layers may be transmitted in

separate elementary streams which are created by adding appropriate identifier information to

streams of data and packetizing the data, it would have been obvious to a person of ordinary

skill in the art at the time of the invention to combine the layered priority separation of *Yahata*

with the separate base and enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and de-multiplexes a base layer and one or more transport layers based on a priority field. (i.e. The system of *Yahata* discloses the use of the priority indicator of a transport stream to separate a base layer and a first level enhancement layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to remain together in one transport stream is that the system of *Yahata* is directed towards DVD decoders, which almost universally support the combination of the base and first extension layer [*Yahata*, Paragraph 0298]. However, in a system, such as that taught by *The Standard* as modified by *Burlsi,* the types of systems supported are more diverse, and unlike a traditional DVD distribution system, the base and first enhancement layer may be separately transmitted in two different transport streams [*Burlsi*, Paragraph 0042] and be decoded by devices that support only the base stream or the base and one or more enhancement streams [See For Example, *Burlsi*, Paragraph 0044-Showing both SD and HD TVs]. Therefore, a person of ordinary skill in the art at the time of the invention would have recognized that the teachings of *Yahata* could be applied to the separate base and enhancement layer transport streams of *The Standard* as modified by *Burlsi* by using a priority indicator to separate one or more of the base and enhancement layers all using the same PID.) The motive to combine is provided by *Yahata* and is to allow the convenient de-multiplexing of the desired layers at diverse decoded types, each supporting the base layer and zero or more enhancement layers in accordance with the decoder capability.

In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base system in which separated base and enhancement MPEG transport streams are transmitted to devices which decode the base layer and one or more of the enhancement layers. The system of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-

multiplexing base and enhancement layers in which the layers desired to be separated are assigned unique priority indicators but the same PID and are de-multiplexed based on the priority indicator. Therefore, the use of a priority indicator to separate the MPEG base and enhancement layer transport streams of *The Standard* as modified by *Burls* would have been obvious to a person of ordinary skill in the art at the time of the invention, in view of its use to separate MPEG transport streams in the system of *Yahata*, and would have produced the predictable result of a system that separates one or more base and enhancement layers by using a priority indicator.

Regarding claims 27, 29 and 30 *The Standard* discloses an information processing apparatus comprising, an information processing method implemented using an information processing apparatus having at least a decoding part, comprising and a non-transitory computer readable medium having stored thereon a program that when executed by the computer causes the computer to execute an information processing method comprising:

a. An input means for inputting and input step of inputting a stream including TS packets forming a base stream, each of the TS packets having transport identifier information that distinguishes the base stream from other streams (Pages xi-xix, 3-6, 10-13, 21-22,43-50). (The system of The Standard discloses a system for the encoding and transport of MPEG data [Pages xi-xix]. The system operates by receiving an incoming video stream [i.e. input stream] [See Fig. 0-1, "Video data" and "Audio Data", Page xi], encoding the stream into one or more packetized elementary streams ["PES"] associated with the input stream [Pages xi-xii], packetizing the one or more PES into a transport stream ["TS"] [Fig. 0-1, "Packetizer" and "Mux", Page xii] [See also Pages xvi-xix, particularly sections 0.4, 0.7 and 0.8], transmitting the TS across a network to a

decoder [Page xii], receiving the TS at the decoder, separating out the input stream by
de-multiplexing the PES's associated with the input stream, decoding the input stream
and providing the decoded video/audio for output [Pages xii-xiii, Particularly Fig. 0-2]
[See also Pages xvi-xix, Particularly Sections 0.4, 0.7 and 0.8].)

b. Determining means and a determining step for referring to the transport identifier
information stored in the TS packets input by the input means and for determining the
type of processable stream (Pages 10-17, 22 and 43-50). (The system of *The Standard*
further discloses that each packetized elementary stream is assigned a packet identifier
["PID"] [i.e. IDs] that is used to uniquely identify that stream in the transport stream [TS]
[See Particularly Section 2.4.1, Page 10 and "PID", Page 22]. Within each TS, a
program association table and program map table are periodically transmitted in a
special PES packets [Pages 43-50, Particularly Section 4.3.3 on Pages 43-44]. The
program association table associates a particular program with a program map table ID,
and the program map table associates the PIDs of the elementary streams that make up
a program with the program map table ID [Pages 43-50] and identifies the type of
processable stream [Page 63, Table 2-36].)

c. Selecting means and a selecting step for selecting, from the stream, the TS packets
having the transport identifier information associated with a selected stream (Page xiii).
(The system of The Standard discloses a channel specific decoder, which de-
multiplexes a particular channel/program [i.e. a "stream"] by determining the associated
elementary streams using the program map table and extracting them from the TS
[Pages xiii and Pages 48-49].)

d. Decoding means for decoding the TS packets selected by the selecting means

(Pages xiii and Pages 48-49 - See (c), Supra).

The Standard fails to disclose the use of more then one extensible enhancement layers, each associated with a separate ID so as to create an input means for inputting and input step of inputting a stream including TS packets forming a base stream, TS packets forming each of first to n-th extension streams having extensibility for the base stream, each of the TS packets having identifier information that indicates priority and respectively distinguishes the base stream from the first to n-th extension streams. In the same field of endeavor, *Bruls* discloses the use of more then one extensible enhancement layers, each associated with a separate ID so as to create an input means for inputting and input step of inputting a stream including TS packets forming a base stream, TS packets forming each of first to n-th extension streams having extensibility for the base stream, each of the TS packets having identifier information that indicates priority and respectively distinguishes the base stream from the first to n-th extension streams (Paragraphs 0031, 0039, and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible enhancement layers for encoding and transporting programs using MPEG encoding techniques [Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible enhancement layers, and The Standard discloses the use of an adding and packetizing means for adding identifier information to a stream and packetizing the stream it would have been

obvious to a person of ordinary skill in the art at the time of the invention to combine the

extensible layers of *Bruls* with the system of *The Standard* by implementing one or more

extensible enhancement layers, each identified with a separate ID. The motive to combine is to

allow the system of *The Standard* to support extensible layered video, which allows increased

flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*,

Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement

layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of

the invention, it is unclear if Paragraph 0003 is a part of the background of the invention,

therefore constituting a separate disclosure.) In the same field of endeavor, The Background of

Bruls discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension

layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary

skill in the art at the time of the invention to implement the multiple extension layers of The

Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting

more then one extension stream as a separate elementary stream with its own stream ID. The

motive to combine is to allow enhanced flexibility by providing multiple extension streams so

that endpoints can decode one or more of the extension streams to obtain incremental quality

increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed

to an ID field, to de-multiplex base and enhancement layer packets, such that the information

processing apparatus and method further comprise an input means and step further comprising

each of the TS packets having transport priority information that indicates priority and

respectively distinguishes the base stream from the first to n-th extension streams and a

selecting means and a selecting step for selecting, from the stream, the TS packets having the

transport identifier information associated with the stream determined by a determining means

to be processable. In the same field of endeavor, *Yahata* discloses the use of a priority field, as

opposed to an ID field, to de-multiplex base and enhancement layer packets, such that the

information processing apparatus and method further comprise an input means and step further

comprising each of the TS packets having transport priority information that indicates priority

and respectively distinguishes the base stream from the first to n-th extension streams and a

selecting means and a selecting step for selecting, from the stream, the TS packets having the

transport identifier information associated with the stream determined by a determining means

to be processable (Paragraphs 0298 and 0326-0338). (The system of *Yahata* discloses a

system that uses a priority bit to de-multiplex a base frame for a DVD encoding from an

extension/enhancement layer frame used for the enhancement information for blu-ray encoding

[Paragraphs 0326-0335]. The priority bit is used to separate the base layer and the level 1

enhancement layer [i.e. Base+Level-EXT] used for DVD transmission from the level 2

enhancement layer [i.e. Level 2-EXT] [Paragraph 0326]. *Yahata* further discloses that the

system combines the base layer and the first enhancement layer in view of the "widespread

use" of devices that support the base layer and the first enhancement layer [Paragraph 0298]

and that each decoder may select an appropriate stream based on its capabilities [Paragraphs

0302-0310 and 0342-0352] [For example, a HD player will look at the program table [Paragraph

0303 and Fig. 38, TS_program_map] in order to determine which of the streams are of the

appropriate type and will then decode both the base and the first and second enhancement

layer, while a standard DVD player will decode only the base and the first enhancement layer

streams [Paragraphs 0294-0302].)

Therefore, since *Yahata* suggests the use of a priority indicator to separate base and

enhancement layers that are contained in elementary streams along with the selective decoding of only compatible streams and the system of *The Standard* as modified by *Burlsi* suggests that all base and enhancement layers may be transmitted in separate elementary streams and the generation of appropriate stream identifier information and subsequent packetizing of the outgoing streams, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the layered priority separation of *Yahata* with the separate base and enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and de-multiplexes a base layer and one or more transport layers based on a priority field and the supported number of enhancement layers. (i.e. The system of *Yahata* discloses the use of the priority indicator of a transport stream to separate a base layer and a first level enhancement layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to remain together in one transport stream is that the system of *Yahata* is directed towards DVD decoders, which almost universally support the combination of the base and first extension layer [*Yahata*, Paragraph 0298]. However, in a system, such as that taught by *The Standard* as modified by *Burlsi,* the types of systems supported are more diverse, and unlike a traditional DVD distribution system, the base and first enhancement layer may be separately transmitted in two different transport streams [*Burlsi*, Paragraph 0042] and be decoded by devices that support only the base stream or the base and one or more enhancement streams [See For Example, *Burlsi*, Paragraph 0044- Showing both SD and HD TVs]. Therefore, a person of ordinary skill in the art at the time of the invention would have recognized that the teachings of *Yahata* could be applied to the separate base and enhancement layer transport streams of *The Standard* as modified by *Burlsi* by using a priority indicator to separate one or more of the base and enhancement layers all using the same PID.) The motive to combine is provided by *Yahata*

and is to allow the convenient de-multiplexing of the desired layers at diverse decoded types, each supporting the base layer and zero or more enhancement layers in accordance with the decoder capability.

In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base system in which separated base and enhancement MPEG transport streams are transmitted to devices which decode the base layer and one or more of the enhancement layers. The system of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-multiplexing base and enhancement layers in which the layers desired to be separated are assigned unique priority indicators but the same PID and are de-multiplexed based on the priority indicator and decoder compatibility. Therefore, the use of a priority indicator to separate the MPEG base and enhancement layer transport streams of *The Standard* as modified by *Burls* into compatible and non-compatible streams would have been obvious to a person of ordinary skill in the art at the time of the invention, in view of its use to separate MPEG transport streams into compatible and non-compatible streams in the system of *Yahata*, and would have produced the predictable result of a system that separates one or more compatible base and enhancement layers by using a priority indicator.

Regarding claim 31, *The Standard* discloses a non-transitory computer readable medium having stored thereon a data structure of an entire stream to be played back by a computer, the entire stream including a base stream, wherein the entire stream includes:

a. TS packets forming the base stream, a header of each of the TS packets forming the base stream includes an ID identifying the TS packet (Pages xi-xix, 3-6, 10-13, 21-22,43-50). (The system of The Standard discloses a system for the encoding and transport of MPEG data [Pages xi-xix]. The system operates by receiving an incoming

video stream [i.e. input stream] [See Fig. 0-1, "Video data" and "Audio Data", Page xi],

encoding the stream into one or more packetized elementary streams ["PES"]

associated with the input stream [Pages xi-xii] [See also Page 35, Table 2-19, "ISO/IEC

12818-3 … audio steam number" - Showing the elementary streams may be part of a

layered audio architecture], packetizing the one or more PES into a transport stream

["TS"] [Fig. 0-1, "Packetizer" and "Mux", Page xii] [See also Pages xvi-xix, particularly

sections 0.4, 0.7 and 0.8], transmitting the TS across a network to a decoder [Page xii],

receiving the TS at the decoder, separating out the input stream by de-multiplexing the

PES's associated with the input stream, decoding the input stream and providing the

decoded video/audio for output [Pages xii-xiii, Particularly Fig. 0-2] [See also Pages xvi-

xix, Particularly Sections 0.4, 0.7 and 0.8].)

b. Wherein the TS packets each include identifier information that indicates distinguishes

the base stream from other streams (Fig. 0-1, "Packetizer" and "Mux", Page xii, and

"PID", Page 22). (The Standard discloses that the header of each packet of the PES

bears the PID associated with that elementary stream).

The Standard fails to disclose the use of more then one extensible enhancement layers,

each associated with a separate ID so as to create TS packets forming each of the first to n-th

extension stream, and a header of each of the TS packets forming the base stream and the TS

packets forming each of the first to n-th extension streams includes an ID identifying the TS

packet, and wherein the TS packets each include ID information that respectively distinguishes

the base stream from the first to n-the extension streams. In the same field of endeavor, *Bruls*

discloses the use of more then one extensible enhancement layers, each associated with a

separate ID so as to create TS packets forming each of the first to n-th extension stream, and a header of each of the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams includes an ID identifying the TS packet, and wherein the TS packets each include ID information that respectively distinguishes the base stream from the first to n-the extension streams (Paragraphs 0031, 0039, and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible enhancement layers for encoding and transporting programs using MPEG encoding techniques [Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible enhancement layers, and The Standard discloses the use of an adding and packetizing means for adding identifier information to a stream and packetizing the stream it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the extensible layers of *Bruls* with the system of *The Standard* by implementing one or more extensible enhancement layers, each identified with a separate ID. The motive to combine is to allow the system of *The Standard* to support extensible layered video, which allows increased flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*, Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of the invention, it is unclear if Paragraph 0003 is a part of the background of the invention, therefore constituting a separate disclosure.) In the same field of endeavor, The Background of *Bruls* discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension

layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary

skill in the art at the time of the invention to implement the multiple extension layers of The

Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting

more then one extension stream as a separate elementary stream with its own stream ID. The

motive to combine is to allow enhanced flexibility by providing multiple extension streams so

that endpoints can decode one or more of the extension streams to obtain incremental quality

increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed

to an ID field, to de-multiplex base and enhancement layer packets that are a part of the same

stream with a common ID, such that the TS packets forming each of the first to n-th extension

stream, and a header of each of the TS packets forming the base stream and the TS packets

forming each of the first to n-th extension streams includes an ID identifying the TS packet, and

wherein the TS packets each include transport priority information that indicates priority and

respectively distinguishes the base stream from the first to n-the extension streams. In the same

field of endeavor, *Yahata* discloses the use of a priority field, as opposed to an ID field, to de-

multiplex base and enhancement layer packets that are a part of the same stream with a

common ID, such that the TS packets forming each of the first to n-th extension stream, and a

header of each of the TS packets forming the base stream and the TS packets forming each of

the first to n-th extension streams includes an ID identifying the TS packet, and wherein the TS

packets each include transport priority information that indicates priority and respectively

distinguishes the base stream from the first to n-the extension streams (Paragraphs 0298 and

0326-0338). (The system of *Yahata* discloses a system that uses a priority bit to de-multiplex a

base frame for a DVD encoding from an extension/enhancement layer frame used for the

enhancement information for blu-ray encoding [Paragraphs 0326-0335]. The priority bit is used

to separate the base layer and the level 1 enhancement layer [i.e. Base+Level-EXT] used for

DVD transmission from the level 2 enhancement layer [i.e. Level 2-EXT] that may share the

same PID [Paragraph 0306 and 0325-0326]. *Yahata* further discloses that the system combines

the base layer and the first enhancement layer in view of the "widespread use" of devices that

support the base layer and the first enhancement layer [i.e. the widespread use of traditional

DVD style encoders does not require the separation of the base and the first enhancement

layer, as all devices support both layers, so only the second enhancement layer, used for HD

type devices is separated] [Paragraph 0298].)

Therefore, since *Yahata* suggests the use of a priority indicator to separate base and

enhancement layers that are contained in elementary streams along with the selective decoding

of only compatible streams and the system of *The Standard* as modified by *Burlsi* suggests that

all base and enhancement layers may be transmitted in separate elementary streams and the

generation of appropriate stream identifier information and subsequent packetizing of the

outgoing streams, it would have been obvious to a person of ordinary skill in the art at the time

of the invention to combine the layered priority separation of *Yahata* with the separate base and

enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and

de-multiplexes a base layer and one or more transport layers based on a priority field and the

supported number of enhancement layers. (i.e. The system of *Yahata* discloses the use of the

priority indicator of a transport stream to separate a base layer and a first level enhancement

layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the

base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to

remain together in one transport stream is that the system of *Yahata* is directed towards DVD

decoders, which almost universally support the combination of the base and first extension layer

[*Yahata*, Paragraph 0298]. However, in a system, such as that taught by *The Standard* as
modified by *Burlsi,* the types of systems supported are more diverse, and unlike a traditional
DVD distribution system, the base and first enhancement layer may be separately transmitted in
two different transport streams [*Burlsi*, Paragraph 0042] and be decoded by devices that
support only the base stream or the base and one or more enhancement streams [See For
Example, *Burlsi*, Paragraph 0044- Showing both SD and HD TVs]. Therefore, a person of
ordinary skill in the art at the time of the invention would have recognized that the teachings of
Yahata could be applied to the separate base and enhancement layer transport streams of *The
Standard* as modified by *Burlsi* by using a priority indicator to separate one or more of the base
and enhancement layers all using the same PID.) The motive to combine is provided by *Yahata*
and is to allow the convenient de-multiplexing of the desired layers at diverse decoded types,
each supporting the base layer and zero or more enhancement layers in accordance with the
decoder capability.

      In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base
system in which separated base and enhancement MPEG transport streams are transmitted to
devices which decode the base layer and one or more of the enhancement layers. The system
of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-
multiplexing base and enhancement layers in which the layers desired to be separated are
assigned unique priority indicators but the same PID and are de-multiplexed based on the
priority indicator. Therefore, the use of a priority indicator to separate the MPEG base and
enhancement layer transport streams of *The Standard* as modified by *Burls* would have been
obvious to a person of ordinary skill in the art at the time of the invention, in view of its use to
separate MPEG transport streams in the system of *Yahata*, and would have produced the
predictable result of a system that separates one or more base and enhancement layers by

using a priority indicator.

    Regarding claims 33, 37 and 38 *The Standard* discloses an information processing apparatus comprising, an information processing method implemented using an information processing apparatus having at least encoding and packetizing parts, comprising and A non-transitory computer readable medium having stored thereon a program that when executed by the computer causes the computer to execute an information processing method comprising:

    a. Encoding means for and an encoding step of encoding at least a base stream of an entire stream that may include the base stream (Pages xi-xix, 3-6, 10-13, 21-22,43-50). (The system of The Standard discloses a system for the encoding and transport of MPEG data [Pages xi-xix]. The system operates by receiving an incoming video stream [i.e. input stream] [See Fig. 0-1, "Video data" and "Audio Data", Page xi], encoding the stream into one or more packetized elementary streams ["PES"] associated with the input stream [Pages xi-xii] [See also Page 35, Table 2-19, "ISO/IEC 12818-3 … audio steam number" - Showing the elementary streams may be part of a layered audio architecture], packetizing the one or more PES into a transport stream ["TS"] [Fig. 0-1, "Packetizer" and "Mux", Page xii] [See also Pages xvi-xix, particularly sections 0.4, 0.7 and 0.8], transmitting the TS across a network to a decoder [Page xii], receiving the TS at the decoder, separating out the input stream by de-multiplexing the PES's associated with the input stream, decoding the input stream and providing the decoded video/audio for output [Pages xii-xiii, Particularly Fig. 0-2] [See also Pages xvi-xix, Particularly Sections 0.4, 0.7 and 0.8].)

    b. First adding means for and a first adding step of adding a same first ID to the stream

encoded by the encoding means among the base stream, the first ID identifying the base

stream (Fig. 0-1, "Packetizer" and "Mux", Page xii, and "PID", Page 22). (The Standard

discloses that the header of each packet of the PES bears the PID associated with that

elementary stream).

c. A packetizing means for and a packetizing step of packetizing the base stream, to

which the first ID information is added by the first adding means into TS packets (Fig. 0-

1, "Packetizer" and "Mux", Page xii, and "PID", Page 22). (The Standard discloses that

all of the individual streams, including the streams bearing the program association table

and program map table are packetized, including adding the PID to the packet, and

multiplexed into a single TS [Fig. 0-1, "Packetizer" and "Mux", Page xii, Pages 22 and

43-46].)

The Standard fails to disclose the use of more then one extensible enhancement layers,

each associated with a separate ID such that the encoding means for and an encoding step of

encoding further comprises at least a base stream of an entire stream that may include the base

stream and first to n-th extension streams having extensibility for the base stream and a

packetizing means for and a packetizing step of packetizing the base stream and the first to n-th

extension streams, to which the first ID are added by the first adding means into TS packets. In

the same field of endeavor, *Bruls* discloses the use of more then one extensible enhancement

layers, each associated with a separate ID such that the encoding means for and an encoding

step of encoding further comprises at least a base stream of an entire stream that may include

the base stream and first to n-th extension streams having extensibility for the base stream and

a packetizing means for and a packetizing step of packetizing the base stream and the first to n-

th extension streams, to which the first ID are added by the first adding means into TS packets (Paragraphs 0031, 0039, and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible enhancement layers for encoding and transporting programs using MPEG encoding techniques [Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible enhancement layers, and The Standard discloses the use of an adding and packetizing means for adding identifier information to a stream and packetizing the stream it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the extensible layers of *Bruls* with the system of *The Standard* by implementing one or more extensible enhancement layers, each identified with a separate ID. The motive to combine is to allow the system of *The Standard* to support extensible layered video, which allows increased flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*, Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of the invention, it is unclear if Paragraph 0003 is a part of the background of the invention, therefore constituting a separate disclosure.) In the same field of endeavor, The Background of *Bruls* discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multiple extension layers of The

Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting more then one extension stream as a separate elementary stream with its own stream ID. The motive to combine is to allow enhanced flexibility by providing multiple extension streams so that endpoints can decode one or more of the extension streams to obtain incremental quality increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets that are a part of the same stream with a common ID, such that the first adding means for and a first adding step of further comprises adding a same first ID to the stream encoded by the encoding means among the base stream and the first to n-th extension streams, the first ID identifying the entire stream and a second adding means for and a second adding step of adding transport priority information to, among the base stream and the first to n-th extension streams, the stream encoded by the encoding means, the transport priority information indicating priority and respectively distinguishing the base stream from, the first to n-th extension streams and a packetizing means for and a packetizing step of packetizing the base stream and the first to n-th extension streams, to which the first ID and the transport priority information are added by the first adding means and the second adding means, into TS packets. In the same field of endeavor, *Yahata* discloses the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets that are a part of the same stream with a common ID, such that the first adding means for and a first adding step of further comprises adding a same first ID to the stream encoded by the encoding means among the base stream and the first to n-th extension streams, the first ID identifying the entire stream and a second adding means for and a second adding step of adding transport priority information to, among the base stream and the first to n-th extension streams, the stream encoded by the encoding means, the transport priority information

indicating priority and respectively distinguishing the base stream from, the first to n-th

extension streams and a packetizing means for and a packetizing step of packetizing the base

stream and the first to n-th extension streams, to which the first ID and the transport priority

information are added by the first adding means and the second adding means, into TS packets

(Paragraphs 0298 and 0326-0338). (The system of *Yahata* discloses a system that uses a

priority bit to de-multiplex a base frame for a DVD encoding from an extension/enhancement

layer frame used for the enhancement information for blu-ray encoding [Paragraphs 0326-

0335]. The priority bit is used to separate the base layer and the level 1 enhancement layer [i.e.

Base+Level-EXT] used for DVD transmission from the level 2 enhancement layer [i.e. Level 2-

EXT] that may share the same PID [Paragraph 0306 and 0325-0326]. *Yahata* further discloses

that the system combines the base layer and the first enhancement layer in view of the

"widespread use" of devices that support the base layer and the first enhancement layer [i.e. the

widespread use of traditional DVD style encoders does not require the separation of the base

and the first enhancement layer, as all devices support both layers, so only the second

enhancement layer, used for HD type devices is separated] [Paragraph 0298].)

Therefore, since *Yahata* suggests the use of a priority indicator to separate base and

enhancement layers that are contained in elementary streams along with the selective decoding

of only compatible streams and the system of *The Standard* as modified by *Burlsi* suggests that

all base and enhancement layers may be transmitted in separate elementary streams and the

generation of appropriate stream identifier information and subsequent packetizing of the

outgoing streams, it would have been obvious to a person of ordinary skill in the art at the time

of the invention to combine the layered priority separation of *Yahata* with the separate base and

enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and

de-multiplexes a base layer and one or more transport layers based on a priority field and the

supported number of enhancement layers. (i.e. The system of *Yahata* discloses the use of the priority indicator of a transport stream to separate a base layer and a first level enhancement layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to remain together in one transport stream is that the system of *Yahata* is directed towards DVD decoders, which almost universally support the combination of the base and first extension layer [*Yahata*, Paragraph 0298]. However, in a system, such as that taught by *The Standard* as modified by *Burlsi,* the types of systems supported are more diverse, and unlike a traditional DVD distribution system, the base and first enhancement layer may be separately transmitted in two different transport streams [*Burlsi*, Paragraph 0042] and be decoded by devices that support only the base stream or the base and one or more enhancement streams [See For Example, *Burlsi*, Paragraph 0044- Showing both SD and HD TVs]. Therefore, a person of ordinary skill in the art at the time of the invention would have recognized that the teachings of *Yahata* could be applied to the separate base and enhancement layer transport streams of *The Standard* as modified by *Burlsi* by using a priority indicator to separate one or more of the base and enhancement layers all using the same PID.) The motive to combine is provided by *Yahata* and is to allow the convenient de-multiplexing of the desired layers at diverse decoded types, each supporting the base layer and zero or more enhancement layers in accordance with the decoder capability.

In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base system in which separated base and enhancement MPEG transport streams are transmitted to devices which decode the base layer and one or more of the enhancement layers. The system of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-multiplexing base and enhancement layers in which the layers desired to be separated are

assigned unique priority indicators but the same PID and are de-multiplexed based on the priority indicator. Therefore, the use of a priority indicator to separate the MPEG base and enhancement layer transport streams of *The Standard* as modified by *Burls* would have been obvious to a person of ordinary skill in the art at the time of the invention, in view of its use to separate MPEG transport streams in the system of *Yahata*, and would have produced the predictable result of a system that separates one or more base and enhancement layers by using a priority indicator.

   Regarding claim 35, The Standard discloses an information processing apparatus, wherein when any of synchronization units of an extension stream corresponding to synchronization units of the base stream are present, the encoding means encodes, the extension stream and the base stream (Pages 80-81, Section 2.7.6). (The system of The Standard Discloses that if scalable coding is used, with spatial scaling, the encoder must, to the maximum extent possible, encode both layers at the same time and with the same presentation time. [i.e. if "spatial scaling" is used, the enhancement layer may not have the same frame rate as the base layer, however, whenever the presentation times of the two layers coincide, they are coded together with the same timestamps]. Therefore, the encoder will encode all streams bearing the same synchronization information.)

   The Standard fails to disclose the system may utilize more then one extension stream so that the information processing apparatus further comprises an apparatus wherein when any of synchronization units of the first to n-th extension streams corresponding to synchronization units of the base stream are present, the encoding means encodes, among the first to n-th extension streams, the extension stream having the present synchronization units and the base stream. In the same field of endeavor, *Bruls* discloses the system may utilize more then one extension stream so that the information processing apparatus further comprises an apparatus

wherein when any of synchronization units of the first to n-th extension streams corresponding

to synchronization units of the base stream are present, the encoding means encodes, among

the first to n-th extension streams, the extension stream having the present synchronization

units and the base stream (Paragraph 0003).

Therefore, since the system of *Burls* suggests the use of more then one enhancement

layer and the system of The Standard discloses that only an enhancement layer that matches

the presentation time (i.e. has synchronization units that correspond to the base layer) of the

base layer is encoded for presentation at the same time of that base layer, it would have been

obvious to a person of ordinary skill in the art at the time of the invention to implement the

multiple enhancement layers of *Burls* into the system of The Standard by causing the encoder

to encode the base layer and any corresponding enhancement layers for decoding at the same

presentation time. The motive to combine is to allow the use of more the one enhancement

layer, allowing for fine-grained enhancement of transmitted media.

Regarding claims 39, 42 and 43, *The Standard* discloses an information processing

apparatus comprising, an information processing method implemented using an information

processing apparatus having at least a decoding part, comprising and a non-transitory computer

readable medium having stored thereon a program that when executed by the computer causes

the computer to execute an information processing method comprising:

a. Input means for and an input step of inputting an entire stream that includes at least

one of TS packets forming a base stream (Pages xi-xix, 3-6, 10-13, 21-22, 43-50). (The

system of The Standard discloses a system for the encoding and transport of MPEG

data [Pages xi-xix]. The system operates by receiving an incoming video stream [i.e.

input stream] [See Fig. 0-1, "Video data" and "Audio Data", Page xi], encoding the

stream into one or more packetized elementary streams ["PES"] associated with the

input stream [Pages xi-xii], packetizing the one or more PES into a transport stream

["TS"] [Fig. 0-1, "Packetizer" and "Mux", Page xii] [See also Pages xvi-xix, particularly

sections 0.4, 0.7 and 0.8], transmitting the TS across a network to a decoder [Page xii],

receiving the TS at the decoder, separating out the input stream by de-multiplexing the

PES's associated with the input stream, decoding the input stream and providing the

decoded video/audio for output [Pages xii-xiii, Particularly Fig. 0-2] [See also Pages xvi-

xix, Particularly Sections 0.4, 0.7 and 0.8].)

b. Selecting means for and a selecting step of selecting a specific type of TS packets

based on a first ID used to identify stream (Pages 10-17, 22 and 43-50). (The system of

The Standard further discloses that each packetized elementary stream is assigned a

packet identifier ["PID"] [i.e. IDs] that is used to uniquely identify that stream in the

transport stream [TS] [See Particularly Section 2.4.1, Page 10 and "PID", Page 22].

Within each TS, a program association table and program map table are periodically

transmitted in a special PES packets [Pages 43-50, Particularly Section 4.3.3 on Pages

43-44]. The program association table associates a particular program with a program

map table ID, and the program map table associates the PIDs of the elementary streams

that make up a program with the program map table ID [Pages 43-50] and identifies the

type of processable stream [Page 63, Table 2-36]. The program association table is the

used by the channel specific decoder, which de-multiplexes a particular

channel/program [i.e. a "stream"] by determining the associated elementary streams

using the program map table and extracting them from the TS for decoding [Pages xiii

and Pages 48-49].)

c. Decoding means for and a decoding step of decoding the TS packets selected by the

selecting means (Pages xiii and Pages 48-49 - See (b), Supra).

The Standard fails to disclose the use of extensible enhancement layers, each

associated with a separate ID so as to create an input means for and an input step of inputting

an entire stream that includes at least one of TS packets forming a base stream and TS packets

forming each of first to n-th extension streams having extensibility for the base stream and a

selecting means for selecting, from the entire stream, TS packets based on an ID respectively

distinguishing the base stream from the first to n-th extension streams, the first ID being stored

in each of the TS packets input by the input means. In the same field of endeavor, *Bruls*

discloses the use of extensible enhancement layers, each associated with a separate ID so as

to create an input means for and an input step of inputting an entire stream that includes at least

one of TS packets forming a base stream and TS packets forming each of first to n-th extension

streams having extensibility for the base stream and a selecting means for selecting, from the

entire stream, processable TS packets based on an ID respectively distinguishing the base

stream from the first to n-th extension streams, and a predetermined condition set in advance,

the first ID being stored in each of the TS packets input by the input means (Paragraphs 0031,

0039, and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible

enhancement layers for encoding and transporting programs using MPEG encoding techniques

[Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system

uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the

base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible

enhancement layers, and The Standard discloses the use of an adding and packetizing means for adding identifier information to a stream and packetizing the stream it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the extensible layers of *Bruls* with the system of *The Standard* by implementing one or more extensible enhancement layers, each identified with a separate ID. The motive to combine is to allow the system of *The Standard* to support extensible layered video, which allows increased flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*, Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of the invention, it is unclear if Paragraph 0003 is a part of the background of the invention, therefore constituting a separate disclosure.) In the same field of endeavor, The Background of *Bruls* discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multiple extension layers of The Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting more then one extension stream as a separate elementary stream with its own stream ID. The motive to combine is to allow enhanced flexibility by providing multiple extension streams so that endpoints can decode one or more of the extension streams to obtain incremental quality increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets based on the ability of a particular device to decode the base and enhancement layers, such that the information

processing apparatus and method further comprise a selecting means for and a selecting step of selecting, from the entire stream, processable TS packets based on a first ID used to identify the entire stream, transport priority information indicating priority and respectively distinguishing the base stream from the first to n-th extension streams, and a predetermined condition set in advance, the first ID and the transport priority information being stored in each of the TS packets input by the input means. In the same field of endeavor, *Yahata* discloses the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets based on the ability of a particular device to decode the base and enhancement layers, such that the information processing apparatus and method further comprise a selecting means for and a selecting step of selecting, from the entire stream, processable TS packets based on a first ID used to identify the entire stream, transport priority information indicating priority and respectively distinguishing the base stream from the first to n-th extension streams, and a predetermined condition set in advance, the first ID and the transport priority information being stored in each of the TS packets input by the input means (Paragraphs 0298 and 0326-0338). (The system of *Yahata* discloses a system that uses a priority bit to de-multiplex a base frame for a DVD encoding from an extension/enhancement layer frame used for the enhancement information for blu-ray encoding [Paragraphs 0326-0335]. The priority bit is used to separate the base layer and the level 1 enhancement layer [i.e. Base+Level-EXT] used for DVD transmission from the level 2 enhancement layer [i.e. Level 2-EXT] [Paragraph 0326]. *Yahata* further discloses that the system combines the base layer and the first enhancement layer in view of the "widespread use" of devices that support the base layer and the first enhancement layer [Paragraph 0298] and that each decoder may select an appropriate stream based on its capabilities [Paragraphs 0302-0310 and 0342-0352] [For example, a HD player will look at the program table [Paragraph 0303 and Fig. 38, TS_program_map] in order to determine which of

the streams are of the appropriate type and will then decode both the base and the first and
second enhancement layer, while a standard DVD player will decode only the base and the first
enhancement layer streams [Paragraphs 0294-0302]. Finally, *Yahada* discloses that the
decoders only de-multiplex layers that they are capable of decoding based on the
predetermined condition of the type of decoder present in the system [Paragraphs 0288-0293].)

Therefore, since *Yahata* suggests the use of a priority indicator to separate base and
enhancement layers that are contained in elementary streams along with the selective decoding
of only compatible streams and the system of *The Standard* as modified by *Burlsi* suggests that
all base and enhancement layers may be transmitted in separate elementary streams and the
generation of appropriate stream identifier information and subsequent packetizing of the
outgoing streams, it would have been obvious to a person of ordinary skill in the art at the time
of the invention to combine the layered priority separation of *Yahata* with the separate base and
enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and
de-multiplexes a base layer and one or more transport layers based on a priority field and the
supported number of enhancement layers. (i.e. The system of *Yahata* discloses the use of the
priority indicator of a transport stream to separate a base layer and a first level enhancement
layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the
base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to
remain together in one transport stream is that the system of *Yahata* is directed towards DVD
decoders, which almost universally support the combination of the base and first extension layer
[*Yahata*, Paragraph 0298]. However, in a system, such as that taught by *The Standard* as
modified by *Burlsi,* the types of systems supported are more diverse, and unlike a traditional
DVD distribution system, the base and first enhancement layer may be separately transmitted in
two different transport streams [*Burlsi*, Paragraph 0042] and be decoded by devices that

support only the base stream or the base and one or more enhancement streams [See For

Example, *Burlsi*, Paragraph 0044- Showing both SD and HD TVs]. Therefore, a person of

ordinary skill in the art at the time of the invention would have recognized that the teachings of

Yahata could be applied to the separate base and enhancement layer transport streams of *The*

Standard as modified by *Burlsi* by using a priority indicator to separate one or more of the base

and enhancement layers all using the same PID.) The motive to combine is provided by *Yahata*

and is to allow the convenient de-multiplexing of the desired layers at diverse decoded types,

each supporting the base layer and zero or more enhancement layers in accordance with the

decoder capability.

       In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base

system in which separated base and enhancement MPEG transport streams are transmitted to

devices which decode the base layer and one or more of the enhancement layers. The system

of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-

multiplexing base and enhancement layers in which the layers desired to be separated are

assigned unique priority indicators but the same PID and are de-multiplexed based on the

priority indicator and decoder compatibility. Therefore, the use of a priority indicator to separate

the MPEG base and enhancement layer transport streams of *The Standard* as modified by

Burls into compatible and non-compatible streams would have been obvious to a person of

ordinary skill in the art at the time of the invention, in view of its use to separate MPEG transport

streams into compatible and non-compatible streams in the system of *Yahata*, and would have

produced the predictable result of a system that separates one or more compatible base and

enhancement layers by using a priority indicator.

       Regarding claim 44, *The Standard* discloses a non-transitory computer readable

medium having stored thereon a data structure of an entire stream to be played back by a

computer, wherein the entire stream includes at least one of a base stream and first to n-th

extension streams having extensibility for the base stream, the entire stream includes:

    a. TS packets forming the base stream (Pages xi-xix, 3-6, 10-13, 21-22,43-50). (The

system of The Standard discloses a system for the encoding and transport of MPEG

data [Pages xi-xix]. The system operates by receiving an incoming video stream [i.e.

input stream] [See Fig. 0-1, "Video data" and "Audio Data", Page xi], encoding the

stream into one or more packetized elementary streams ["PES"] associated with the

input stream [Pages xi-xii] [See also Page 35, Table 2-19, "ISO/IEC 12818-3 … audio

steam number" - Showing the elementary streams may be part of a layered audio

architecture], packetizing the one or more PES into a transport stream ["TS"] [Fig. 0-1,

"Packetizer" and "Mux", Page xii] [See also Pages xvi-xix, particularly sections 0.4, 0.7

and 0.8], transmitting the TS across a network to a decoder [Page xii], receiving the TS

at the decoder, separating out the input stream by de-multiplexing the PES's associated

with the input stream, decoding the input stream and providing the decoded video/audio

for output [Pages xii-xiii, Particularly Fig. 0-2] [See also Pages xvi-xix, Particularly

Sections 0.4, 0.7 and 0.8].)

    b. TS packets forming, when any of synchronization units an extension stream

corresponding to synchronization units of the base stream are present, the extension

stream (Fig. 0-1, "Packetizer" and "Mux", Page xii, and "PID", Page 22 and Pages 80-

81, Section 2.7.6). (The Standard discloses that all of the individual streams, including

the streams bearing the program association table and program map table are

packetized, including adding the PID to the packet, and multiplexed into a single TS [Fig.

0-1, "Packetizer" and "Mux", Page xii, Pages 22 and 43-46]. The system of The

Standard Discloses further discloses that the system may use a base layer and a single

enhancement layer [Pages 80-81, Section 2.7.6]. During the course of encoding the

base and enhancement layers if spatial scalable coding is used then the encoder must,

to the maximum extent possible, encode both layers at the same time and with the same

presentation time. [i.e. if "spatial scaling" is used, the enhancement layer may not have

the same frame rate as the base layer, however, whenever the presentation times of the

two layers coincide, they are coded together with the same timestamps]. Therefore, the

encoder will encode all streams bearing the same synchronization information.)

c. A header of each of the TS packets includes an ID (Fig. 0-1, "Packetizer" and "Mux",

Page xii, and "PID", Page 22). (The Standard discloses that all of the individual streams,

including the streams bearing the program association table and program map table are

packetized, including adding the PID to the packet, and multiplexed into a single TS [Fig.

0-1, "Packetizer" and "Mux", Page xii, Pages 22 and 43-46].)

The Standard fails to disclose the use of more then one extensible enhancement layers,

each associated with a separate ID so as to create a stream further comprising TS packets

forming, when any of synchronization units of the first to n-th extension streams corresponding

to synchronization units of the base stream are present, among the first to n-th extension

streams, the extension stream having the present synchronization units and a header of each of

the TS packets forming the base stream and the TS packets forming each of the first to n-th

extension streams includes a first ID for respectively distinguishing the base stream from the

first to n-th extension streams. In the same field of endeavor, *Bruls* discloses the use of more

then one extensible enhancement layers, each associated with a separate ID so as to create a

stream further comprising TS packets forming, when any of synchronization units of the first to

n-th extension streams corresponding to synchronization units of the base stream are present,

among the first to n-th extension streams, the extension stream having the present

synchronization units and a header of each of the TS packets forming the base stream and the

TS packets forming each of the first to n-th extension streams includes a first ID for respectively

distinguishing the base stream from the first to n-th extension streams (Paragraphs 0031, 0039,

and 0042). (The system of *Bruls* discloses the use of a base and one or more extensible

enhancement layers for encoding and transporting programs using MPEG encoding techniques

[Paragraphs 0031 and 0039, See also Paragraph 0003]. *Bruls* further discloses that the system

uses a separate PID to identify the base and enhancement layers [Paragraph 0042] and that the

base and enhancement layers may be a part of different transport streams [Paragraph 0042].)

Therefore, since *Bruls* discloses the use of a base layer and one or more extensible

enhancement layers, and The Standard discloses the use of an adding and packetizing means

for adding identifier information to a stream and packetizing the stream it would have been

obvious to a person of ordinary skill in the art at the time of the invention to combine the

extensible layers of *Bruls* with the system of *The Standard* by implementing one or more

extensible enhancement layers, each identified with a separate ID. The motive to combine is to

allow the system of *The Standard* to support extensible layered video, which allows increased

flexibility and reduced bandwidth requirements for video distribution (See Generally, *Bruls*,

Paragraphs 0006-0014).

Assuming arguendo, that *Bruls* fails to disclose the use of more the one enhancement

layers (i.e. Because *Bruls* is not in standard US format with a clearly identified background of

the invention, it is unclear if Paragraph 0003 is a part of the background of the invention,

therefore constituting a separate disclosure.) In the same field of endeavor, The Background of *Bruls* discloses the use of one or more enhancement layers (See Paragraph 0003).

Therefore, since the background of *Bruls* discloses the use of more then one extension layer (i.e. a first to n-the extension stream), it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multiple extension layers of The Background of *Bruls* into the teachings of *The Specification* as modified by *Bruls* by transmitting more then one extension stream as a separate elementary stream with its own stream ID. The motive to combine is to allow enhanced flexibility by providing multiple extension streams so that endpoints can decode one or more of the extension streams to obtain incremental quality increases.

The Standard as modified by *Burls* fails to disclose the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets, such that the header of each of the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams further includes a first ID used to identify the entire stream and a transport priority information indicating priority and respectively distinguishing the base stream from the first to n-th extension stream. In the same field of endeavor, *Yahata* discloses the use of a priority field, as opposed to an ID field, to de-multiplex base and enhancement layer packets, such that the information processing apparatus and method further comprises adding transport priority information that indicates priority and respectively distinguishes the base stream from the first to n-th extension streams and packetizing the base stream and the first to n-th extension streams, to which the transport priority information is added by the adding means, into TS packets (Paragraphs 0298 and 0326-0338). (The system of *Yahata* discloses a system that uses a priority bit to de-multiplex a base frame for a DVD encoding from an extension/enhancement layer frame used for the enhancement information for blu-ray encoding

[Paragraphs 0326-0335]. The priority bit is used to separate the base layer and the level 1 enhancement layer [i.e. Base+Level-EXT] used for DVD transmission from the level 2 enhancement layer that share the same PID [i.e. Level 2-EXT] [Paragraphs 0326]. *Yahata* further discloses that the system combines the base layer and the first enhancement layer in view of the "widespread use" of devices that support the base layer and the first enhancement layer [Paragraph 0298] and that each decoder may select an appropriate stream based on its capabilities [Paragraphs 0302-0310 and 0342-0352] [For example, a HD player will look at the program table [Paragraph 0303 and Fig. 38, TS_program_map] in order to determine which of the streams are of the appropriate type and will then decode both the base and the first and second enhancement layer, while a standard DVD player will decode only the base and the first enhancement layer streams [Paragraphs 0294-0302].)

Therefore, since *Yahata* suggests the use of a priority indicator to separate base and enhancement layers encoded with the same PID and the system of *The Standard* as modified by *Burlsi* suggests that all base and enhancement layers may be transmitted in separate elementary streams and the generation of appropriate stream identifier information and subsequent packetizing of the outgoing streams, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the layered priority separation of *Yahata* with the separate base and enhancement layers of *The Standard* as modified by *Burlsi* to form a system that transports and de-multiplexes a base layer and one or more transport layers based on a priority field and the supported number of enhancement layers. (i.e. The system of *Yahata* discloses the use of the priority indicator of a transport stream to separate a base layer and a first level enhancement layer from a second level enhancement layer [*Yahata*, Paragraph 0326]. The reason that the base layer [i.e. Base] and the first level enhancement layer [i.e. Level1-EXT] are allowed to remain together in one transport stream is that the system

of *Yahata* is directed towards DVD decoders, which almost universally support the combination

of the base and first extension layer [*Yahata*, Paragraph 0298]. However, in a system, such as

that taught by *The Standard* as modified by *Burlsi,* the types of systems supported are more

diverse, and unlike a traditional DVD distribution system, the base and first enhancement layer

may be separately transmitted in two different transport streams [*Burlsi*, Paragraph 0042] and

be decoded by devices that support only the base stream or the base and one or more

enhancement streams [See For Example, *Burlsi*, Paragraph 0044- Showing both SD and HD

TVs]. Therefore, a person of ordinary skill in the art at the time of the invention would have

recognized that the teachings of *Yahata* could be applied to the separate base and

enhancement layer transport streams of *The Standard* as modified by *Burlsi* by using a priority

indicator to separate one or more of the base and enhancement layers all using the same PID.)

The motive to combine is provided by *Yahata* and is to allow the convenient de-multiplexing of

the desired layers at diverse decoded types, each supporting the base layer and zero or more

enhancement layers in accordance with the decoder capability.

In the alternative, *The Standard* as modified by *Burls* can be viewed as teaching a base

system in which separated base and enhancement MPEG transport streams are transmitted to

devices which decode the base layer and one or more of the enhancement layers. The system

of *Yahata* can be viewed as teaching a known improvement used in MPEG decoders for de-

multiplexing base and enhancement layers in which the layers desired to be separated are

assigned unique priority indicators but the same PID and are de-multiplexed based on the

priority indicator and decoder compatibility. Therefore, the use of a priority indicator to separate

the MPEG base and enhancement layer transport streams of *The Standard* as modified by

Burls into compatible and non-compatible streams would have been obvious to a person of

ordinary skill in the art at the time of the invention, in view of its use to separate MPEG transport

streams into compatible and non-compatible streams in the system of *Yahata*, and would have

produced the predictable result of a system that separates one or more compatible base and

enhancement layers by using a priority indicator.

7.   **Claim 28** is rejected under 35 U.S.C. 103(a) as being unpatentable over The ISO/IEC

13818-1 Standard ("The Standard") (Author Unknown, Generic Coding of Moving Pictures and

Associated Audio: Systems, International Organization for Standardization, Workgroup 11 -

Coding of Moving Pictures and Associate Audio, Pages 1-130, 13 November 1994), *Bruls*, et al.

(US Pre Grant Publication No. 2006/0098937 A1) and *Yahata*, et al. (US Pre Grant Publication

No. 2009/0010614 A1) as applied to claim 27 and further in view of *Kelly*, et al. (US Pre Grant

Publication No. 2002/0191625 A1).

        Regarding claim 28, The Standard fails to disclose a buffering means for buffering, with

respect to the transport priority information, the TS packets selected by the selecting means. In

the same field of endeavor, *Kelly* discloses a buffering means for buffering, with respect to the

transport priority information, the TS packets selected by the selecting means (Figs. 4 and 5 and

Paragraphs 0022-0030). (The system of *Kelly* discloses a system that may receive a base layer

and one or more enhancement layers [Paragraph 0020]. The received streams are buffered and

are then entered into the appropriate array for each of the base and enhancement layers

describing the buffered packets that are to be sent to the buffer for a particular layer [Paragraph

0030]. Therefore, the packets are entered into or removed from the buffer with respect to the

later/transport priority information for each layer.)

        Therefore, since the system of *Kelly* suggests the use of buffering with respect to the

encoding layer and the system of The Standard as modified by *Bruls* and *Yahata* suggests the

use of priority information to separate base and enhancement layers, it would have been

obvious to combine the layer specific buffering of *Kelly* with the system of The Standard as

modified by *Bruls* and *Yahata* by buffering TS packets based on the layer, as taught by *Kelly*,

where the layer of a particular TS packet is determined from the priority information associated

with that packet, as taught by The Standard as modified by *Bruls* and *Yahata* to form a system

that beffers TS packets with respect to priority information. The motive to combine is provided

by *Kelly* and is to allow the proper reconstruction of the timing between the base and

enhancement layers, even when the layers originate from different sources or travel via different

paths (Paragraphs 0008-0010).

8.   **Claims 32, 34, 40 and 45** are rejected under 35 U.S.C. 103(a) as being unpatentable

over The ISO/IEC 13818-1 Standard ("The Standard") (Author Unknown, Generic Coding of

Moving Pictures and Associated Audio: Systems, International Organization for Standardization,

Workgroup 11 - Coding of Moving Pictures and Associate Audio, Pages 1-130, 13 November

1994), *Bruls*, et al. (US Pre Grant Publication No. 2006/0098937 A1) and *Yahata*, et al. (US Pre

Grant Publication No. 2009/0010614 A1) as applied to claims 33, 39 and 44 and further in view

of *Kim*, et al. (S. Kim, S. Park, Y. Kim, Fine Grain Scalability in MPEG-4 Audio, Audio

Engineering Society, 111th Convention of The AES, 24 Sept 2001, Pages 1-5).

        Regarding claim 32, The Standard fails to disclose a data structure wherein the TS

packets forming the base stream and the TS packets forming each of the first to n-th extension

streams, which are included in the entire stream, are arranged in sequence of the TS packets to

be played back at the same time and in the order of the TS packets forming the base stream

and the TS packets forming each of the first to n-th extension streams. In the same field of

endeavor, *Kim* discloses a data structure wherein the TS packets forming the base stream and

the TS packets forming each of the first to n-th extension streams, which are included in the

entire stream, are arranged in sequence of the TS packets to be played back at the same time

and in the order of the TS packets forming the base stream and the TS packets forming each of

the first to n-th extension streams (Page 3, Fig. 3). (The system of Kim discloses a system

where the base and enhancement layers of a transmitted bit stream for a timeslot/frame are

multiplexed in layer order with the base stream first, followed by each extension stream in order

of significance [Page 3, Fig. 3].)

Therefore, since *Kim* discloses the arrangement of a scalable stream of data by adding

the component layers in order of significance, it would have been obvious to a person of

ordinary skill in the art at the time of the invention to arrange the TS bit stream of The Standard

in the order of layered significance by multiplexing the streams in the order of the significance of

each layer in a particular timeframe. The motive to combine is to allow easy scalability by

allowing the truncation of the bit stream at a particular enhancement layer simply by cutting off

the stream after the desired layers have been received.

Regarding claim 34, The Standard fails to disclose an information processing

apparatus wherein the encoding means encodes the TS packets forming the base stream and

the TS packets forming each of the first to n-th extension streams, which are included in the

entire stream, so that the TS packets to be played back at the same time are arranged in

sequence in the order of the TS packets forming the base stream and the TS packets forming

each of the first to n-th extension streams. In the same field of endeavor, *Kim* discloses an

information processing apparatus wherein the encoding means encodes the TS packets forming

the base stream and the TS packets forming each of the first to n-th extension streams, which

are included in the entire stream, so that the TS packets to be played back at the same time are

arranged in sequence in the order of the TS packets forming the base stream and the TS

packets forming each of the first to n-th extension streams (Page 3, Fig. 3). (The system of Kim

discloses a system where the base and enhancement layers of a transmitted bit stream for a

timeslot/frame are multiplexed in layer order with the base stream first, followed by each

extension stream in order of significance [Page 3, Fig. 3].)

Therefore, since *Kim* discloses the arrangement of a scalable stream of data by adding

the component layers in order of significance, it would have been obvious to a person of

ordinary skill in the art at the time of the invention to arrange the TS bit stream of The Standard

in the order of layered significance by multiplexing the streams in the order of the significance of

each layer in a particular timeframe. The motive to combine is to allow easy scalability by

allowing the truncation of the bit stream at a particular enhancement layer simply by cutting off

the stream after the desired layers have been received.

Regarding claims 40, The Standard fails to disclose the information processing

apparatus wherein the entire stream is input to the input means including the TS packets

arranged in sequence of the TS packets to be played back at the same time and in the order of

the TS packets forming the base stream and the TS packets forming each of the first to n-th

extension streams. In the same field of endeavor, *Kim* discloses the information processing

apparatus wherein the entire stream is input to the input means including the TS packets

arranged in sequence of the TS packets to be played back at the same time and in the order of

the TS packets forming the base stream and the TS packets forming each of the first to n-th

extension streams (Page 3, Fig. 3). (The system of Kim discloses a system where the base and

enhancement layers of a transmitted bit stream for a timeslot/frame are multiplexed in layer

order with the base stream first, followed by each extension stream in order of significance

[Page 3, Fig. 3].)

Therefore, since *Kim* discloses the arrangement of a scalable stream of data by adding the component layers in order of significance, it would have been obvious to a person of ordinary skill in the art at the time of the invention to arrange the TS bit stream of The Standard in the order of layered significance by multiplexing the streams in the order of the significance of each layer in a particular timeframe. The motive to combine is to allow easy scalability by allowing the truncation of the bit stream at a particular enhancement layer simply by cutting off the stream after the desired layers have been received.

Regarding claims 45, The Standard fails to disclose a non-transitory computer readable medium wherein the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams, which are included in the entire stream, are arranged in sequence of the TS packets to be played back at the same time and in the order of the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams. In the same field of endeavor, *Kim* discloses a non-transitory computer readable medium wherein the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams, which are included in the entire stream, are arranged in sequence of the TS packets to be played back at the same time and in the order of the TS packets forming the base stream and the TS packets forming each of the first to n-th extension streams (Page 3, Fig. 3). (The system of Kim discloses a system where the base and enhancement layers of a transmitted bit stream for a timeslot/frame are multiplexed in layer order with the base stream first, followed by each extension stream in order of significance [Page 3, Fig. 3].)

Therefore, since *Kim* discloses the arrangement of a scalable stream of data by adding the component layers in order of significance, it would have been obvious to a person of ordinary skill in the art at the time of the invention to arrange the TS bit stream of The Standard

in the order of layered significance by multiplexing the streams in the order of the significance of

each layer in a particular timeframe. The motive to combine is to allow easy scalability by

allowing the truncation of the bit stream at a particular enhancement layer simply by cutting off

the stream after the desired layers have been received.

9.   **Claims 36, 41 and 46** are rejected under 35 U.S.C. 103(a) as being unpatentable over

The ISO/IEC 13818-1 Standard ("The Standard") (Author Unknown, Generic Coding of Moving

Pictures and Associated Audio: Systems, International Organization for Standardization,

Workgroup 11 - Coding of Moving Pictures and Associate Audio, Pages 1-130, 13 November

1994), *Bruls*, et al. (US Pre Grant Publication No. 2006/0098937 A1) and *Yahata*, et al. (US Pre

Grant Publication No. 2009/0010614 A1) as applied to claims 33, 39 and 45 and further in view

of Wu, et al. (US Patent No. 6,614,936).

        Regarding claim 36, The Standard discloses an information processing apparatus,

wherein when any of synchronization units of an extension stream corresponding to

synchronization units of the base stream are present, the encoding means encodes, the

extension stream and the base stream (Pages 80-81, Section 2.7.6). (The system of The

Standard Discloses that if scalable coding is used, with spatial scaling, the encoder must, to the

maximum extent possible, encode both layers at the same time and with the same presentation

time. [i.e. if "spatial scaling" is used, the enhancement layer may not have the same frame rate

as the base layer, however, whenever the presentation times of the two layers coincide, they

are coded together with the same timestamps]. Therefore, the encoder will encode all streams

bearing the same synchronization information.)

        The Standard fails to disclose the system may utilize more then one extension stream so

that the information processing apparatus further comprises an apparatus wherein when any of synchronization units of the first to n-th extension streams corresponding to synchronization units of the base stream are present, the encoding means encodes, among the first to n-th extension streams, the extension stream having the present synchronization units and the base stream. In the same field of endeavor, *Bruls* discloses the system may utilize more then one extension stream so that the information processing apparatus further comprises an apparatus wherein when any of synchronization units of the first to n-th extension streams corresponding to synchronization units of the base stream are present, the encoding means encodes, among the first to n-th extension streams, the extension stream having the present synchronization units and the base stream (Paragraph 0003).

Therefore, since the system of *Burls* suggests the use of more then one enhancement layer and the system of The Standard discloses that only an enhancement layer that matches the presentation time (i.e. has synchronization units that correspond to the base layer) of the base layer is encoded for presentation at the same time of that base layer, it would have been obvious to a person of ordinary skill in the art at the time of the invention to implement the multiple enhancement layers of *Burls* into the system of The Standard by causing the encoder to encode the base layer and any corresponding enhancement layers for decoding at the same presentation time. The motive to combine is to allow the use of more the one enhancement layer, allowing for fine-grained enhancement of transmitted media.

The Standard as modified by *Burls* fails to disclose encoding the entire stream using a variable bit rate. In the same field of endeavor, *Wu* discloses encoding the entire stream using a variable bit rate (Column 2, Lines 10-49). (The system of *Wu* discloses a coder that uses a variable number of fine grain enhancement layers based on the available network bandwidth to encode and transmit data to a remote receiver [Column 1, Line 50 to Column 2, Line 49]. The

output of the coder is in the form of a base layer and a variable number of enhancement layers
[Column 1, Line 50 to Column 2, Line 49].)

Therefore, since *Wu* discloses coding a variable number of enhancement layers and the
system of The Standard as modified by *Burls* discloses an encoder that receives the output of a
coder and forms a base and one or more enhancement layers based on the correspondence of
the base and enhancement layer synchronization units, it would have been obvious to a person
of ordinary skill in the art at the time of the invention to combine the variable layers of *Wu* with
the encoder of The Standard as modified by *Burls* by having the coder of *Wu* transmit a variable
number of enhancement layers to the encoder of The Standard as modified by *Burls*, which
could then encode the present layers for transmission in a TS. The motive to combine is
provided by *Wu* and is to allow for a variable number of enhancement layers in accordance with
the available bandwidth of the channel, thereby allowing maximum transmission quality for a
given channel (See Paragraph 0013).

Regarding claim 41, The Standard discloses an information processing apparatus
wherein the entire stream input to the input means at least includes an encoded base stream,
and further includes an extension stream which correspond to synchronization units of the base
stream (Pages 80-81, Section 2.7.6). (The system of The Standard Discloses that if scalable
coding is used, with spatial scaling, the encoder must, to the maximum extent possible, encode
both layers at the same time and with the same presentation time. [i.e. if "spatial scaling" is
used, the enhancement layer may not have the same frame rate as the base layer, however,
whenever the presentation times of the two layers coincide, they are coded together with the
same timestamps]. Therefore, the encoder will encode all streams bearing the same
synchronization information and transmit the result on the the input of the decoder.)

The Standard fails to disclose the system may utilize more then one extension stream so

that the information processing apparatus further comprises an apparatus wherein the entire

stream input to the input means at least includes an encoded base stream, and further includes

the first to n-th extension streams which correspond to synchronization units of the base stream.

In the same field of endeavor, *Bruls* discloses the system may utilize more then one extension

stream so that the information processing apparatus further comprises an apparatus wherein

the entire stream input to the input means at least includes an encoded base stream, and

further includes the first to n-th extension streams which correspond to synchronization units of

the base stream (Paragraph 0003).

Therefore, since the system of *Burls* suggests the use of more then one enhancement

layer and the system of The Standard discloses that only an enhancement layer that matches

the presentation time (i.e. has synchronization units that correspond to the base layer) of the

base layer is encoded for presentation at the same time of that base layer, it would have been

obvious to a person of ordinary skill in the art at the time of the invention to implement the

multiple enhancement layers of *Burls* into the system of The Standard by causing the encoder

to encode the base layer and any corresponding enhancement layers for decoding at the same

presentation time and to transmit the result on to the input of the decoder for decoding. The

motive to combine is to allow the use of more the one enhancement layer, allowing for fine-

grained enhancement of transmitted media.

The Standard as modified by *Burls* fails to disclose encoding the entire stream using a

variable bit rate. In the same field of endeavor, *Wu* discloses encoding the entire stream using a

variable bit rate (Column 2, Lines 10-49). (The system of *Wu* discloses a coder that uses a

variable number of fine grain enhancement layers based on the available network bandwidth to

encode and transmit data to a remote receiver [Column 1, Line 50 to Column 2, Line 49]. The

output of the coder is in the form of a base layer and a variable number of enhancement layers

[Column 1, Line 50 to Column 2, Line 49].)

       Therefore, since *Wu* discloses coding a variable number of enhancement layers and the system of The Standard as modified by *Burls* discloses an encoder that receives the output of a coder and forms a base and one or more enhancement layers based on the correspondence of the base and enhancement layer synchronization units, it would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the variable layers of *Wu* with the encoder of The Standard as modified by *Burls* by having the coder of *Wu* transmit a variable number of enhancement layers to the encoder of The Standard as modified by *Burls*, which could then encode the present layers for transmission in a TS. The motive to combine is provided by *Wu* and is to allow for a variable number of enhancement layers in accordance with the available bandwidth of the channel, thereby allowing maximum transmission quality for a given channel (See Paragraph 0013).

       Regarding claim 46, The Standard fails to disclose the entire stream at least includes the base stream, and further includes the TS packets forming the first to n-th extension streams corresponding to the synchronization units of the base stream, the number of the TS packets being variable. In the same field of endeavor, *Wu* discloses the entire stream at least includes the base stream, and further includes the TS packets forming the first to n-th extension streams corresponding to the synchronization units of the base stream, the number of the TS packets being variable (Column 2, Lines 10-49). (The system of *Wu* discloses a coder that uses a variable number of fine grain enhancement layers based on the available network bandwidth to encode and transmit data to a remote receiver [Column 1, Line 50 to Column 2, Line 49]. The output of the coder is in the form of a base layer and a variable number of enhancement layers [Column 1, Line 50 to Column 2, Line 49].)

       Therefore, since *Wu* discloses coding a variable number of enhancement layers and the

system of The Standard as modified by *Burls* discloses an encoder that receives the output of a

coder and forms a base and one or more enhancement layer TS packets based on the

correspondence of the base and enhancement layer synchronization units, it would have been

obvious to a person of ordinary skill in the art at the time of the invention to combine the variable

layers of *Wu* with the encoder of The Standard as modified by *Burls* by having the coder of *Wu*

transmit a variable number of enhancement layers and corresponding enhancement layer to the

encoder of The Standard as modified by *Burls*, which could then encode the present layers for

transmission in corresponding TS packets for each layer. The motive to combine is provided by

Wu and is to allow for a variable number of enhancement layers in accordance with the

available bandwidth of the channel, thereby allowing maximum transmission quality for a given

channel (See Paragraph 0013).

Response to Arguments

10.   Applicant's arguments with respect to claims 24-46 have been considered but are moot

in view of the new ground(s) of rejection.

Conclusion

11.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant

is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

 Any inquiry concerning this communication or earlier communications from the examiner

should be directed to Christopher Crutchfield whose telephone number is (571) 270-3989. The

examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM EST.

 If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Daniel Ryman can be reached on (571) 272-3152. The fax phone number for the

organization where this application or proceeding is assigned is 571-273-8300.

 Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you

would like assistance from a USPTO Customer Service Representative or access to the

automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Christopher Crutchfield/
Examiner, Art Unit 2466
12/1/2010

/Daniel J. Ryman/
Supervisory Patent Examiner, Art Unit 2466